CURRENT PRACTICES IN PUBLIC-PRIVATE PARTNERSHIPS FOR HIGHWAYS

E X E C U T I V E S U M M A R Y

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1. EXECUTIVE SUMMARY

States throughout the country face serious gaps between the level of highway service demanded by citizens and businesses and the funding available to finance, construct, operate, and maintain the highway system. The needed improvements would provide substantial economic benefits to the traveling public – both to citizens of the sponsoring states and to the residents and businesses traveling through those states to other destinations.

The State of Maryland is exploring the potential to expand the use of public-private partnerships (P3) to deliver highway projects. Maryland has enjoyed success using the "design-build" model of P3 in several highway projects. That model would be expanded to larger projects and could encompass a broader range of project activities including the financing, planning, design, construction, operation, and maintenance of highways.

Maryland offers an unusual environment for public partnerships with the private sector in toll financings. It has one statewide (user fee supported) agency, the Maryland Transportation Authority (the Authority), which is the sole entity empowered by State law to establish and collect tolls on State highway facilities. The Authority operates its facilities as a unified financial system, thereby creating a pooled revenue fund for the operation, maintenance, and enhancement of their highway facilities. The Authority already administers a P3 program, which has been used for a variety of non-highway transportation projects, including port and airport support facilities. While the financing available through the Authority has some advantages, any Maryland P3 initiative for highways could be supplemented by private sector financing.

The Authority, the Maryland Department of Transportation (MDOT), and the State Highway Administration (SHA) commissioned a review of transportation P3 initiatives throughout the US in order to gain a broad understanding of the challenges and obstacles associated with such programs. The information used in the review came from two concurrent research efforts conducted by staff from the Authority, MDOT, SHA, FHWA, and KCI Technologies (the Maryland P3 Team) in 2004:

- Request for Information (RFI) on Public-private Partnerships for Highways:
 - The Authority, SHA, and MDOT developed an RFI in an effort to secure privatesector input on P3s for Maryland highway projects. The full text of the RFI can be found in **Appendix A**.
- Scanning tours of states with P3 highway experience:
 - The Maryland P3 Team conducted scanning tours of three states with public-private partnership (P3) experience: Virginia, California, and Texas.

These two research efforts sought information on:

- Best practices for implementing P3 programs for highway projects;
- Benefits a P3 might offer Maryland if used as an alternative to traditional Authority and SHA practices in production and financing of highways; and

• Market interest regarding implementation of a P3 highway program in Maryland.

1.1 **KEY FINDINGS**

After reviewing the results of the research efforts, the project team reached the following conclusions about the current practices in P3 highway projects in the United States.

1.1.1 Using the P3 approach for large projects can improve price certainty and project delivery

Most often, P3 projects tend to be large, complex, and expensive. They usually include a design/build (DB) component, but oftentimes include more phases, such as continued operations and maintenance. Most industry representatives indicated that projects should be in excess of \$200-250 million to justify the considerable effort involved in competing for the project. These mega-projects provide opportunities for significant efficiencies that save time and money. The certainty of long-term involvement in a highway project encourages the private sector teams to seek long-term cost efficiencies using innovative design and construction techniques.

- P3s can provide relatively fast access to increased staff for project development, which can contribute to improved project schedules and delivery.
- In many states, P3 endeavors are motivated by a new opportunity to use toll revenues in the project finance. In states without a history of toll roads, the use of tolls can provide new revenue sources to construct larger projects that would otherwise have taken decades to complete. California, Virginia, Texas, and South Carolina used private businesses and non-profit corporations to establish tolls. In these cases, the private organization, not a State agency, is responsible for payment of loans and revenue bonds that finance the highway facility.
- California SR 125 and the Central Texas Turnpike System used contributions from local governments as part of the initial project-financing packages. The Virginia SR 28 Corridor Improvements Project and the Dulles Corridor Rapid Transit Project financing packages include a dedicated property tax on the parcels of land that increase in value due to the availability of transportation services. The Chicago Skyway concession attracted some private sector cash investment and provided the City with an infusion of new capital.
- In 2003, UK's National Audit Office (NAO) completed a review of that nation's Private Finance Initiative, the equivalent to a P3 program. NAO concluded that using a P3 approach would deliver both improved price certainty and more predictable schedules for the delivery of quality assets.
- By avoiding the inflation that can occur in projects lasting many years, there is greater potential for price certainty and greater predictability of ultimate project delivery resulting from the P3 approach.
- The use of non-traditional funding for P3 projects can reduce the pool of projects competing for the traditional funding resources.

• Some of the risk for project quality can be shifted to the private sector when operations and maintenance activities are also included in the project scope.

1.1.2 Many of the projects described as P3 in the press are primarily design/build (DB) projects; however, other types of P3 approaches are beginning to emerge for large transportation projects

In 2004, the majority (71%) of the P3 transportation facility contracts in the United States with a value over \$50 million were Design/Build (62%), or Design/Build/Finance (9%). Projects that included some longer-term aspect of maintenance, operation, finance, warranty, or equipment procurement accounted for 20 percent of the current P3 projects in the United States. The average cost of these nine projects was approximately \$660 million.

In the State of Maryland, 15 highway design-build contracts have been issued, ranging in size from \$2.7 million to \$28.3 million, with an average of \$10 million. There are an additional 6 design-build projects in the proposal stage at this time. These range from \$1.6 million to \$48 million, with an average size of \$28 million. None of these projects has included contractor responsibility for right-of-way acquisition, railroad relocation or long-term system preservation or warranty.

1.1.3 The public and private sector participants in a P3 have different reasons for participating and different measures of success

Government agencies chose P3 arrangements for a variety of reasons:

- To avoid an increase in the bonded indebtedness of the State;
- To construct new highway facilities with minimal initial public investment;
- To reduce the cost of a new highway to the general taxpayers;
- To gain access to nontraditional revenue sources for highway construction, such as toll, local tax revenues or private capital;
- To enhance production resources for the delivery, operations, and maintenance of major projects when internal staff resources are operating at capacity;
- To save time in the overall project delivery by streamlining the procurement process;
- To permit concurrent design, right-of-way acquisition and construction activities in place of the sequential completion of these activities:
- To promote private sector creativity and innovation in project delivery; and,
- To permit a project to proceed as a whole rather than in the phased construction often required by a State's budgetary process.

Private sector partners have a variety of motives for joining public-private partnerships:

- To increase the number or size of highway construction projects in production;
- To operate toll highways as long-term for-profit investments;

- To direct or encourage development of properties in a given area through highway construction; and,
- To secure a long-term commitment to their team for design and construction of a large project.

1.1.4 Private sector firms evaluate P3 projects individually

Private sector firms that responded to the RFI reported that there are two prime motivators for private sector interest in a P3:

- Opportunity to develop a major project that will achieve cost/time savings or develop new technology that result in market growth; and
- Opportunity to complete key projects that add value to communities, resulting in market development or increased stock and shareholder value.

The features private companies consider when evaluating a P3 investment opportunity include:

- The level of investment and technical risk;
- Assignment of risk between the public and private sectors;
- Perception of a trustworthy procurement process;
- The strength of the public sector project management;
- The strength of project commitment from the public sector;
- The project size greater than \$200-250 million;
- Length of time to return on investment; and,
- The clarity of the enabling legislation.

1.1.5 Proper allocation of risk is unique to every project and key to the success of each partnership

Risk cannot be eliminated, only allocated. Risk sharing in a P3 project involves the transfer of risks to the partner best able to manage it. Risk efficiency is achieved when each risk is borne by the party who can cover it most efficiently. In an ideal P3 project, all of the risks are covered efficiently. Generally, the public sector agency will accept the risk of scope, public support, and right of way costs, while the private partner will be responsible for construction cost and schedule risks. Risk allocation will vary according to the type of project and location – there is no optimum risk allocation formula. The most efficient risk allocation depends on the stage at which a project is procured and the potential for change during the project development.

1.1.6 Maryland is a unusual financial environment for P3 projects

Unlike many of the states currently using P3 approaches to highway finance, Maryland has a long history of tolled highways. While the role of the Authority as administrator of a statewide toll facility program is replicated in some state programs, none of the other states visited or studied appear to have a single statewide agency with comparable

financial resources. The Authority already has a track record of bond sales and repayment and a favorable rating on the bond market. Private sector firms and newly created not-for-profit corporations are likely to have higher financing costs than the Authority.

1.1.7 Most states with P3 programs for highways have a specialized staff and process for P3 projects

The success of a P3 is equally dependent upon the skills of both sectors in the venture. The highest levels of success are achieved when a skilled private entity is teamed with a committed and capable State agency staff. Implementation of P3 projects typically requires a dedicated staff of State employees with a willingness to be pioneers, and a commitment to making the project succeed. These employees deal primarily or exclusively with P3 projects and report to a supervisor with broad responsibility for the state's highway network. The selection of project staff was noted as critical in every State visited. Since these projects represent a significantly different method of project execution, the agency staff involved must be willing to evaluate new ideas on their merits, not on past practices, and to adjust rapidly to change. Most States supplement this internal team with specialized consultants that provide specific support to the P3 program, most notably support for financing, legal issues, and negotiation.

The commitment of the State elected leadership and appointed leadership of the transportation department is key to P3 program success. Generally, the states have specific legislation governing P3 activities that lay out the project selection and contract award process.

The time from initial proposal of a P3 project to execution of a Comprehensive Agreement ranges from 11 to 29 months, depending upon the complexity of the project and whether a final price is included in the agreement.

1.1.8 Design/build P3 programs permit traditionally sequential design and construction activities to be done simultaneously. Some programs include right-of-way (ROW) acquisition

By consolidating final design, ROW acquisition, and construction under one contract, the P3 can pursue the three activities simultaneously rather than sequentially. By providing all final project delivery elements under the umbrella of a single team, the interface between these different elements is improved, reducing possible schedule delays and cost overruns. In some P3 projects, the right-of-way (ROW) acquisition process is managed by the private entity, and coordinated with the final design and construction phasing. In these situations, most of the schedule risks related to ROW can be transferred to the private entity. The cost risk and condemnation process remain with the public agency, as does responsibility for assuring that private property owners' rights are protected.

Co-location of private partners and public agencies is highly desirable during the construction process. In every case visited by the Maryland P3 Team, State and private sector design staff are co-located at the project site to facilitate communication and collaborative decision-making.

1.1.9 Federal approvals should be obtained early in the process

When the procurement approach for a Federally funded project includes release of the RFP prior to completion of the NEPA process, FHWA must approve the approach under the SEP-14 (Special Experimental Project Number 14) or SEP-15 program. There was nearly universal agreement that approval of Federal level environmental permits was required prior to negotiation of a fixed price construction contract with the P3.

1.1.10 In a P3 project, the State's approach to quality assurance during construction varies considerably depending upon the long-term obligation of the P3 to the facility

Three basic approaches to operation and maintenance keep the P3 involved after construction is complete and the facility is opened:

- P3 operation, maintenance, and asset management
- P3 operation and state maintenance
- State operations and maintenance with P3 warranty

Operations and maintenance contracts usually last for 30 to 99 years. When the P3 that designs and builds a highway also has the capital maintenance agreement, they have a strong motivation to ensure that quality is integrated into construction and materials. In cases where the P3 has a long-term role in the facility maintenance through a warranty, maintenance contract, or franchise agreement, the state DOT staffs have found that their role in quality assurance may be reduced. The willingness of state quality assurance (QA) staff to consider new approaches to ensuring the quality of the constructed facility, while protecting the state interests, is identified by both state and private sector partners as key to the success of this phase of a P3 project.

Strong, clear performance standards at the time of transfer to the State at the end of a maintenance contract can also act as a form of warranty. These performance standards must be carefully defined during the contract process, so that the receiving agency is not required to undertake repairs or system preservation activities for a specified period. The standards for pavement condition and other key assets must balance normal wear with a reasonable level of system preservation by the P3.

1.1.11 Everywhere P3 projects are used, they have generated attention from the public and the media

The size of most P3 highway projects makes them targets for public attention. A project that enjoys broad public support can lower the political risk of the public agency and the financial risk for the private entity. Conversely, an unpopular project with lukewarm support is unlikely to attract either private investment or public agency funding.

When P3 projects involve tolls or other user fees, the amount of public attention usually increases. It is sometimes difficult to separate the public reaction to the increased private sector involvement from the reaction to tolls or to the highway itself. In the limited opinion research completed to date, the public is more likely to approve of variable tolls than of private, for-profit development and operation of toll lanes.

Surprisingly, income levels of the respondents seem to have little effect on their approval of private, for-profit operation.

Some limited research has also looked at media coverage of P3 projects. The study reveals that the media tends to cover disputes between governments and P3 entities in detail and as a clash between competing interests:

- Public v. private;
- Safety v. profit;
- Transit v. highways;
- Taxation v. private ownership; and,
- Nonprofit v. for-profit organization.

When press reports have been positive, they have praised P3 toll roads for:

- Being innovative;
- The philosophy behind the privatization of toll lanes;
- Allowing private companies to assume or share the financial risk and reducing the use of public money to finance the project; and
- Providing funding for needed roadways when public dollars were not available for the improvements.
- Negative media coverage of P3 partnerships has suggested that the corporations operating toll roads may:
- Sacrifice safety for profit;
- Repeatedly raise toll rates;
- Maintain secrecy about their financial performance;
- Discourage improvement to nearby "free" roads in order to maintain demand for the toll road.

1.1.12 P3 projects tend to be very customer-oriented

In most of the P3 toll facilities, drivers were viewed as "customers" with a high priority placed on customer satisfaction. Marketing efforts targeted facility customers and potential customers; a group viewed as distinct from the general public and the users of non-toll facilities. Most P3 projects with a toll component have active programs to attract users and provide a travel experience that is "superior" to the surrounding non-toll roads. In most cases, the facilities are portrayed as offering a faster, more predictable and more pleasant ride. Even for non-toll projects where the P3 is primarily involved in design and construction, not long-term operation, there is usually a corporate outreach effort aimed at reducing complaints during construction and assuring continued public and political support for the project.

1.1.13 Local labor unions and contractors have concerns that must be addressed in the States in order for P3 programs to succeed

Some of the earliest objections to P3 projects in Maryland and other States have come from unions, local contractors, and local engineering firms. The experience of states with P3 projects is that most lead firms self-perform only a fraction of the work, preferring to contract out to local firms and to use local labor. Concerns from the local contracting community have been addressed in all three of the States visited by noting that the State already has an active program of maintenance and construction, which will continue. A P3 project that represents new work is more likely to receive favorable support from labor and contractors groups, than a P3 program for portions of the State's existing program.

Local engineering and design firms may be negatively affected by P3 projects that include design. The national engineering firms can send design work to offices throughout the country, so long as a local project manager handles the review process.

Most of the larger P3 projects involve some federal finding or other federal involvement that triggers Davis-Bacon requirements. In Maryland, state law also sets minimum labor and environmental standards that apply to all state funded transportation projects. Goals for minority, disadvantaged and small businesses are typically part of the procurement process included in the terms of the comprehensive agreement (CA).

1.1.14 States have a variety of approaches to selecting P3 projects

The P3 solicitation process generally includes a request for qualifications (RFQ) that leads to a short-list of qualified firms followed by a request for proposals (RFP). Selection is based upon a best value evaluation that considers both the technical approach and the price proposal. A majority of P3 proposals are solicited through the RFQ/RFP process with selection based on a ranking of the responses based upon preestablished performance criteria and price¹, rather than low bid. Generally, the P3 scope, schedule, and plan of finance cannot be determined precisely enough to lend it to the traditional low bid process.

An unsolicited P3 proposal is generally a multi-step process. The initial submission is typically conceptual. Once an unsolicited proposal is accepted, there is typically a period for submission of competing proposals. The period for submission of the competing proposals ranges from 30 to 120 days, with 60 days being a widely recommended minimum. Both the States and the private sector report that a shorter timeframe for competing proposals limits the potential for competition, and that a period of 90-120 days is necessary to develop a competitive conceptual proposal. Some private firms noted that giving competitors excessive time to submit proposals may stifle the incentive to submit unsolicited proposals in the first place.

The best value evaluation criteria used by the states includes timesavings, creative financing, revenue enhancement, construction staging, traffic maintenance during construction, toll collection mechanisms, and operation and maintenance costs. Best

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¹ In Maryland, this approach is called "competitive sealed proposal" (CSP), some other jurisdictions use the term "best value"

value evaluations consider the overall business plan and the risk of execution to the proposer, but may not allow direct numerical comparisons between competitors.

When a negotiated RFP is developed, state agency personnel must treat the short-listed firms uniformly and in confidence during discussions about the draft RFP. The short-listed firms must trust the State, and financiers must trust the process if the effort is to culminate with final results that the public can trust.

Most of the private sector respondents place great emphasis on the value of an interactive relationship between the potential design-build teams and the preparers of the National Environmental Protection Act (NEPA) documents. In fact, several teams identified this as necessary for the success of a P3. The ability to inject project-specific innovative solutions early in the project development provides a prime opportunity to reduce the costs and time for project delivery.

Even if the P3 partner has a role in the NEPA process, the State or its contractors would prepare all the (Environmental Impact Statement) EIS documents and remain solely responsible for the objectivity of the NEPA evaluation. The P3 organization would be limited to providing background information that the State might use in its analysis.

1.1.15 P3 projects are funded with a wide variety of financing tools

In the States using P3 to finance highway projects, a primary motive is the desire to issue bonds that are not secured by the State's general fund. In Maryland, the Authority is an established independent agency, not supported by any State tax revenues, that is able to issue revenue bonds secured by a system of highway toll revenues. Issuing bonds secured by a system of toll roads, rather than by a stand-alone facility can result in a lower interest rate.

Funding sources other than tolls can include:

Federal and State and local transportation funds, including grant anticipation notes and Transportation Infrastructure Finance & Innovation Act (TIFIA) loans;

- Local tax revenue sources, like special taxing districts such as those used by Virginia;
- Locally adopted tax increment financing in which bonds are issued to pay for the construction and paid off with the value of increased taxes generated when property values rise;
- Donations of land provided by local governments or other private sources; and,
- Private equity investment that is not backed by project revenue bonds.

The assumption of risk by the bondholders with pay-off to come from toll revenues is sometimes characterized as "private investment". This arrangement does not differ significantly from the situation that already exists in Maryland where tolls are collected by a public agency and bonds are sold by a government entity, but not backed by the full faith and credit of the State of Maryland.

In the early years of most new toll roads, the costs of operations, maintenance, and debt-repayment might exceed the toll revenues The most common means of addressing these "ramp-up" challenges has been to refinance the project revenue bonds several times during the early years. The involvement of the private sector as a partner in project finance can allow new approaches, including the use of short-term loans, private equity investments, and other financing programs not typically available for governments. One of the more innovative uses of the TIFIA program occurred when Texas used a TIFIA loan commitment to guarantee the bonds it planned to finance using tolls from the Central Texas Turnpike, something like a standby line of credit. The TIFIA funds would be used only if revenues from the tolls were not sufficient to cover the debt. So long as the tolls were sufficient, none of the TIFIA funds would actually be spent.

1.2 LESSONS LEARNED

The following lessons are based upon the review of the current practices for P3 highway projects conducted during 2004. These lessons have important implications for the development of P3 programs in any states. Like the review itself, these lessons cover a wide range of topics, including legal questions; public acceptance; the processes for selecting projects and partners; environmental review; project finance, design, construction and maintenance; and the management structures used by state governments to administer P3 highway projects.

1.2.1 Legal Issues

The FHWA design-build regulations limit the flexibility of the state in crafting the P3 program for highways. The SEP-14 program provided additional flexibility in specific cases and was used by several states to craft successful P3 projects. However, experience with SEP –14 revealed that the level of flexibility it provided did not address many of the concerns raised in emerging P3 projects.

In October 2004, FHWA adopted SEP-15, a new experimental process to identify, for trial evaluation, new public-private partnership approaches to project delivery. SEP-15 addresses, but is not limited to, four major components of project delivery:

- Contracting
- Compliance with environmental requirements
- Right-of-way acquisition
- Project finance

Elements of the transportation planning process may be also involved. SEP-15 applications may include suggested changes to the FHWA's traditional project approval procedures and may require some modifications in the implementation of FHWA policy. Deviations from current title 23, U.S.C., requirements and generally applicable FHWA regulations also may be involved.²

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² SEP-15 Program, Public-Private Partnerships, FHWA, 2005 http://www.fhwa.dot.gov/ppp/sep15.htm

An added legal issue raised in all the States visited was the question of right-of-way ownership. In every case, the State assumed ownership of the ROW to limit the tort liability of the private partner.

Maryland has a specific state requirement that may pose a challenge for some firms interested in participating in P3 projects. Under Maryland law any firm that has assisted a state agency in a project valued at over \$100 million during the post-ROD period, however small the role, will be barred from competing in a construction phase solicitation.

1.2.2 Public Acceptance

The private sector prefers to participate when public acceptance of a highway is high and there is a clear consensus on the need for the improvement. In many cases, these projects are the ones most likely to be funded using traditional approaches.

Public acceptance of a P3 project will vary depending upon whether and what kind of tolls are imposed.

The advertising and outreach tools used by the private sector in P3 projects may be more effective in reaching isolated groups and likely customers of the facility.

The involvement of a private sector operator will draw mixed reactions from the public, some will applaud the potential efficiency, and others will be suspicious that the costs of the project will be inflated or the quality will be compromised to increase profits.

Contracts for P3 projects may require MBE participation, goals and labor guarantees or SBA set-asides. While Federal guidelines prohibit preferences for local business and labor, most P3 projects managed by out-of-state firms make extensive use of local labor and material suppliers.

A non-compete clause that limits improvements to nearby roads can lead to public opposition of the private owner and force public purchase of the asset. If a non-compete clause is included in a comprehensive agreement, it should be crafted to protect the ability of the DOT to make safety improvements or allow compensation if the DOT must make competing capacity improvements. One approach is to guarantee a minimum traffic volume to the P3 and allow competing improvements as long as minimum volumes are maintained.

1.2.3 Project Selection

A process that accepts unsolicited proposals is more likely to attract participants if the window for submission of competing proposals is shorter.

One incentive for private sector submission of an unsolicited proposal is the opportunity to secure an early commitment for the life of a project from the public agency.

Use of a modified solicited process (Section 7.3) can provide the opportunity for innovation, reduce the number of directly competing proposals, and allow the state a better level of control on the number of type of proposals received.

1.2.4 Procurement and P3 Selection

The procurement process chosen should allow for early participation of potential P3 vendors in the NEPA process.

The most commonly used method for choosing between competing vendors for P3 projects is best value (a combination of technical approach and price).

Negotiated RFPs can allow the state and potential bidders to share ideas that may result in a better project.

Negotiated RFPs require considerable time and money and should be reserved for large projects with potential for innovation that may contribute to significant cost savings or schedule reduction. To encourage participation in a process requiring a significant investment of time and staff resources, the state should provide stipends to the unsuccessful bidders.

A P3 should only be pursued where the strong likelihood of timely construction funding exists.

1.2.5 Environmental Review

Early involvement of the P3 in project conceptualization may be very beneficial and the NEPA process can be structured to permit this early involvement.

Multiple P3 firms can be used during NEPA to provide input prior to competing for a fixed-fee contract upon completion of NEPA.

1.2.6 Financing

Development of the financial approach to a P3 project goes beyond questions of who issues long-term debt. Significant savings have been achieved through innovative uses of short-term borrowing and federal credit guarantees.

1.2.7 Final Design

Use of a P3 permits all the final design activities and the construction process to proceed simultaneously with phasing based upon the complexity of the various road segments. This approach can significantly reduce project delivery time.

1.2.8 Construction, Quality Assurance and Maintenance

Investing the same private entity with responsibility for design, construction, and maintenance forges a strong incentive to develop a cost effective and durable project.

1.2.9 Administration

Public staff assigned to the project should be dedicated exclusively to the P3 project and should be prepared to embrace new approaches and innovation.

For each project, the State should perform a risk management analysis to identify the risks most appropriately transferred to the private sector.